

USSR

PRYANITSKIY, A. M., BASILENKO, Yu. A.

"Methods of Recognition of the Symmetrical Nature of Boolean Functions"

Priboy i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb.
[Automation Devices and Systems. Republic Interdepartmental Thematic
Scientific and Technical Collection], 1973, No 26, pp 124-127 (Trans-
lated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No
8 V414 by A. Muchnik)

Translation: An algorithm is presented for establishment of symmetry of
an arbitrary logical algebra function fixed by a sequence of 0 and 1 cor-
responding to values of the function in lexicographically ordered sets of
arguments. A clear logic tree method, convenient for machine realization,
is used. The number of necessary comparisons in this case is $2^{n-1}-1$, where
 n is the number of arguments, which is less than the number of comparisons
(operations) in other known methods for testing the symmetry of Boolean
functions.

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PRYANITSKIY, A. M., VITENKO, I. V.

UDC: 8.74

"Finite Pattern Recognition Automata"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1973, vyp. 10, pp 93-99 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V698 by the authors)

Translation: Reading machines are considered in which the objects to be recognized are coded by words of the same length. The problem of minimizing the recognition automaton with terminal states is formulated and solved. The feasibility of using finite Moore automata for pattern recognition is studied.

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UDC: 8.74

SIRODZHA, I. B., SALYGA, V. I., MYSHKO, Ye. I., VASILENKO, Yu. A., KARTA-
SHOV, L. N., PRYANITSKIY, A. M., KUZ'MINA, O. I.

"Modeling the Process of Teaching Pattern Recognition by the Method of
R-Functions With the Use of a Digital Computer"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of
Bionics. Republic Interdepartmental Thematic Scientific and Technical
Collection), 1971, vyp. 7, pp 106-112 (from RZh-Kibernetika, No 4, Apr
72, Abstract No 4V582)

Translation: The paper deals with a mathematical model of instruction
whose basis is a developed learning algorithm of pattern recognition
distinguished by the use of a fundamentally new procedure of predicative
description of arbitrary geometric forms in multidimensional spaces with
the aid of R-functions. Authors' abstract.

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USSR

UDC 68:

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DOROGOV, A. YE., BOLOTOV, B. V., KIRILLOV, V. G., OGURTSOV, K. A.,
PRYASHNIKOV, V. M., and REMIZOV, B. A.

"Analog-Digital Decision, Regulating, and Control Computer"

USSR Author's Certificate No 258744, filed 17 Nov 62, Moscow, Otkrytiya
Izobreteniya Promychnennyye Obratzsy i Tovarnyye Znaki, No 1, Jan 70,
p 132

Translation: An analog- digital decision, regulating and control com-
puter which consists of an adder and memory unit, problem input unit,
multiplier, input device for positioning coefficients, and control
desk is presented. Its special feature is the fact that for the pur-
pose of simplification coupled with increased versatility, the adder
and memory units are connected to the outputs of the input device for
positioning coefficients and the multiplier. The output of the input
device for positioning coefficients is connected to the first input of
the multiplier, and the computer input is connected to the second input
of the multiplier through the problem input unit.

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USSR

UDC 621.791.793.052.01:669.017.3:669.14.013.298.3

KHAKIMOV, A. N., Candidate of Technical Sciences, YEFIMENKO, L. A., Engineer, and PRYGAYEV, A. K., Engineer, Moscow Institute of the National Economy imeni G. V. Plekhanov and GP (abbreviation unknown) imeni I. M. Gubkina; SMIRNOV, B. A., Candidate of Technical Sciences, IVCHNIKIN, I. I., Candidate of Technical Sciences, SOSEDOV, A. F., Engineer, and ROSSHCHUPKIN, N. P., Engineer, All-Union Scientific Research Institute Montazhspeystroy

"Regulation of the Structure and Properties of Welded Joints of 10G2FR Heat-Treated Steel in Electroslag Welding"

Moscow, Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 24-26

Abstract: A study was made of the conditions for the regulation of the structure and properties of electroslag-welded joints of 10G2FR heat-treated low-alloy sheet steel, 40 mm thick, with a view to increase the structural-mechanical homogeneity of welded joints. The introduction of a powerlike additive metal into the slag bath favors a reduction of the stay period over the temperature of the critical point Ac_3 of the near-seam metal at heating from 45-50 to 10-12 sec., an increase of the heating rate from 8-10 to 35-40°C/sec, and nearly two-fold increase of the welding rate. The application of

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KHAKIMOV, A. N., et al., Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 24-26
accompanying cooling makes it possible to decrease the stay period over the Ac_3
temperature of the near-seam metal on cooling from 140-170 to 80-95 sec and to
increase the cooling rate from 0.7-1 to 13.5-14° C/sec. At 12.5-14° C/sec cool-
ing rate, the impact ductility of the seam and the near-seam zone of welded
joints of 10G2FR heat-treated steel increases up to a level exceeding the
norm values within the temperature interval of 20 to -60° C, and a loss of
strength is practically prevented. Six figures, three tables, two biblio-
graphic references.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--GEOCHEMICAL CHARACTERISTICS OF PETROLEUMS FROM THE RECHITSA DEPOSIT
-U-
AUTHOR--PRYLUBKA, YA.M., LAPUSH, V.A., SEMYACHKA, R.YA.
COUNTRY OF INFO--USSR
SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER, KHIM. NAVUK 1970, (1), 90-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--PETROLEUM DEPOSIT, CRUDE OIL, CHEMICAL COMPOSITION, PHYSICAL
CHEMISTRY PROPERTY, METHANE, GEOCHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/1135 STEP NO--UR/0419/70/000/001/0090/0094
CIRC ACCESSION NO--AP0107624
UNCLASSIFIED

2/2 017
 CIRC ACCESSION NO--AP0107624 UNCLASSIFIED PROCESSING DATE--11SEP70
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECHITSA DEPOSIT, SITUATED IN
 THE SOUTHEASTERN PART OF THE PRYPYAT SYNCLINE, IS LOCALIZED IN A
 BRACHYANTICLINAL FOLD OF SUBLATITUDINAL STRIKE. THE DEPOSIT CONTAINS 7
 OIL HORIZONS: 4 AMONG THE INTERSALT FORMATIONS (LOWER AND UPPER
 FAMENNIAN), 2 BELOW SALIFEROUS STRATA (SUBSALT FORMATION, FRASNIAN), AND
 1 IN MIDDLE DEVONIAN CARBONATE RESERVOIR ROCKS. SAMPLES FROM 16 WELLS
 WERE ANALYZED. THE D PRIME20 OF OILS VARIES (0.840-0.906). THE
 LIGHTEST PETROLEUMS IN EACH HORIZON ARE CONCD. IN ELEVATED PARTS OF THE
 STRUCTURE AND THE HEAVIEST IN ITS LOWEST PARTS, I.E. CLOSE TO THE OIL
 WATER CONTACT. PETROLEUMS OF THE RECHITSA DEPOSIT ARE RICH IN SOLID
 PARAFFIN HYDROCARBONS (SMALLER THAN OR EQUAL TO 0.5PERCENT) AND HAVE
 HIGH F.P. CAUSED BY LARGE AMTS. OF SOLID PARAFFINS. THE DIFFERENCES IN
 COMPN. AND PROPERTIES OF OILS WERE ATTRIBUTED TO THE VARIABLE DEGREES OF
 METAMORPHISM AND SUPERGENE ALTERATION.

UNCLASSIFIED

UNCLASSIFIED
TITLE--HEAT OF FORMATION OF POTASSIUM AND MAGNESIUM SELENATE (SELENIUM
ANALOG OF SCHOENITE) K SUB2 MG(SEO SUB4) SUB2 AND 6H SUB2 O -U-
AUTHOR--(02)-PRIMOVA, L.A., SELIVANOVA, N.M.
PROCESSING DATE--02OCT70
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 507-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HEAT OF FORMATION, CRYSTAL HYDRATE, CALORIMETRY, POTASSIUM
COMPOUND, MAGNESIUM COMPOUND, SELENATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/0854
CIRC ACCESSION NO--AP0104290
STEP NO--UR/0076/70/044/002/0507/0503
UNCLASSIFIED

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CIRC ACCESSION NO--AP0104290

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0-

HDEGREES SUB298, OF CRYST. K SUB2 MG(SEO SUB4)SUB2 AND 6H SUB2 O FORMED
FROM ITS ELEMENTS, DETD. CALORIMETRICALLY, WAS MINUS 939.8 PLUS OR MINUS
KCAL-MOLE.

ABSTRACT. THE HEAT OF FORMATION, DELTA

UNCLASSIFIED

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UDC 523.164.32:621.317.757.38

VEDENEYEV, YU. B., PRYTKOV, N. M.

"Radiospectrographs in the 0.3-3 meter Range"

Moscow, Priory i Tekhnika Eksperimenta, No 5, 1972, pp 122-124

Abstract: Two spectrographs for the 0.3-0.6 meter and 1.2-3 meter bands are described. The heterodyne method of analysis with a "zero" intermediate frequency is used. The heterodynes are adjusted mechanically for one second. The noise factor is 10-30. The spectrographs are used to record the radio wavelength emission of the sun on a radio telescope with a parabolic mirror 15 meters in diameter. Some example spectrograms are presented. The measured values of the sensitivity to the radio wavelength emission of the sun agree with the calculated results. The spectrographs are currently used to record the solar radio wavelength emission spectra at the Zimenki station.

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USSR

PRZHIBEL'SKIY, S. G., KHODOVOY, V. A.

UDC 621.375.82

"Shape of the Absorption Line of an Atom in the Field of Strong Interference Radiation"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp.2, Novosibirsk, 1972, pp 148-153 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D850)

Translation: A theoretical study was made of the shape of the absorption line in the basic channel of a three-level system located in a field of strong non-monochromatic radiation. The nonmonochromatic field is considered to be obtained as a result of modulation of a monochromatic signal resonant to the transition between excited states by a random noise field having gaussian statistics. The absorption line has the form of two peaks the distance between which is determined by the mean value of the field amplitude. The shape of the peak varies as a function of the noise intensity and the width of the noise spectrum; in the limiting case of a broad spectrum the shape of the line is Lorentian; and in the case of a narrow spectrum, gaussian.

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USSR

BONCH-BRUYEVICH, A. M., KOSTIN, N. N., PRZHIBEL'SKIY, S. G., KHODOVOY, V. A.,
KHROMOV, V. V., CHIGIR', N. A.

UDC 621.375.82

"Resonance Nonlinear Phenomena in Elementary Noninteracting Systems"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 75-95 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D861)

Translation: A study was made of nonlinear phenomena in sets of elementary noninteracting systems under the effect of powerful radiation as a function of its spectral composition. The displacement and splitting of the D-absorption lines of the chief doublet of the K atom in the radiation field of a ruby laser were investigated experimentally. Nonlinear phenomena were detected in connection with the variation of the refraction coefficients of the atomic vapors of Rb and K in a laser radiation field with a broad spectrum ($\Delta \lambda = 10$ nm) (the variation of the polarization, focusing, and defocusing of the radiation passing through the vapor, induced parametric scattering). Intense directional radiation was observed in a number of transitions of the Rb atom on excitation by a laser in a pigment ($\lambda = 775-795$ nm). The phenomenon of nonlinear population of the excited states of the K and Rb molecules with nonuniformly broadened absorption bands was detected and investigated.

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BONCH-BRUYEVICH, A. M., et al., Nelineyn, protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 75-95

A study was made of the saturation kinetics of the absorption in red bands of Rb molecules under the effect of ruby laser radiation. It was established that the absorption decreases uniformly along the entire band and is restored within $2 \cdot 10^{-2}$ seconds. These phenomena are explained by dissociation and reduction of the Rb molecules. The results of all of the experiments were compared with the theoretical calculations. The bibliography has 10 entries.

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AA0046426

P

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

UR 0482

241857 SHUT-OFF VALVE with expanding inner sealing
element (2) which, compared with those
constructions where the outer wall is compressed,
has a longer life. The control medium enters
connection (4) and inflates the tyre shaped sealing
element (2) and shuts off the flow. Fitting (5)
protects the sealing element from excessive wear.

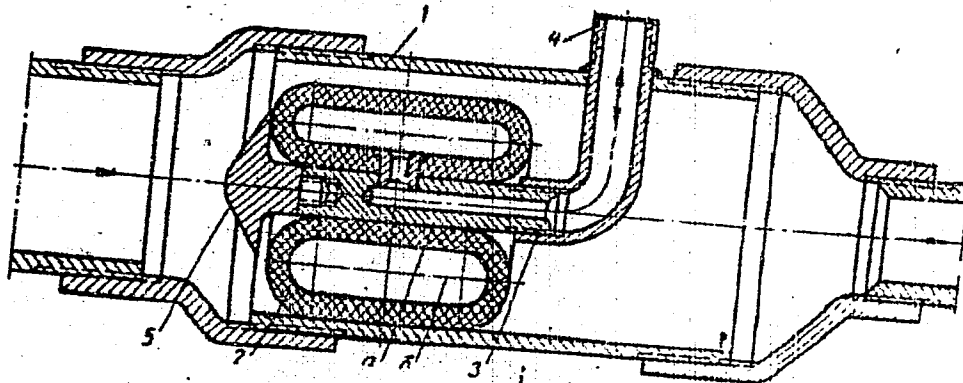
1.4.63. as 828248/25-8, PRZHILENSKII, Yu. I.
(27.8.69) Bul. 14/18.4.69. Cl. 47. Int. Cl.
F 16k.

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19781637

AA0046426



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19781638

11/1

USSR

UDC 681.326

PRZHIYALKOVSKIY, V. V., SMIRNOV, G. D., PYKHIN, V. YA., VASILEVSKIY, A. N.,
ZAPOL'SKIY, A. P., MAL'TSEVA, V. A., IVANOV, G. A., REMOROVA, R. A., MEMEN'AN,
M. YE., and KUSHNEREV, N. T.

"Processor for Digital Data Processing System"

USSR Authors' Certificate No 305477 Cl. G06 f 15/16, filed 18 Apr 69,
published 29 Jul 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 5, May 72, Abstract No 5B220P)

Translation: The proposed device can be used in general-purpose computers operating in the binary and decimal number systems, under fixed- and floating-point conditions, and with representation of information in the form of machine levels and alphanumeric symbols, which have the capability of a wide build-up of peripherals. The processor contains arithmetic and logic units broken down into sections, a data store with word addressing and symbolic addressing, a control device to perform operations in accordance with a program routine, built-in multiplex and selector channels to communicate with the set of peripherals operating simultaneously with the arithmetic and logic unit, a symbol isolation unit, a number unit, and a storage address register.

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USSR

UDC 681.32:31

PRZHYALKOVSKY, V. V., SMIRNOV, G. D., and PYKHIN, V. YA.

"The Minsk-32 Electronic Computer"

Elektronnaya vychislitel'naya mashina "Minsk-32" (cf. English above), Moscow, "Statistika," 1972, 160 pp, ill., 56 k. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5874K from annotation)

Translation: The book presents the principal technical parameters, operation algorithms, general structure, and capabilities of the Minsk-32 electronic computer. Its main features are described in detail. Questions of providing compatibility with the Minsk-2 and Minsk-22 computers are also considered. The book is intended for specialists working on computers of this series.

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USSR

DYADYUSHA, G. G., PRZHONSKAYA, O. V., TIKHONOV, Ye. A., and
SHPAK, M. T.

UDC: 535.373.2

"Investigating the Laws of Radiation Transitions from the Second'
Excitation Singlet State of Dye Molecules"

Moscow, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 36, No 5,
1972, pp 945-950

Abstract: This paper is based on an earlier article written by the authors named above and published in the Journal of Experimental and Theoretical Physics (ZhETF, 14, 330, 1971). The earlier article announced the discovery of intense shortwave radiation from molecular solutions of cyanine dyes, which was interpreted as radiation from the second electron-state excitation $S_2 \rightarrow S_0$, and showed experimentally that this radiation is not connected with photochemical transformations or the presence of contaminants. In the present paper, the authors clarify the laws of shortwave fluorescence by investigating two homologous cyanine dye molecules. In the first, oscillation of the π electron system is possible in two mutually perpendicular directions, along the axis of symmetry and at right angles to it; the second type is characterized by a much greater linearity of oscillation of the π electron system. The results of experimentation with both

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UDC: 535.373.2
DYADYUSHA, G. G., et al, Izvestiya AN SSSR -- Seriya Fizicheskaya,
vol 36, No 5, 1972, pp 945-950

molecules, excited by the mercury lamp type DRSn-250 with excitation wavelengths of 313, 366, and 405 nm, are given. Information regarding the mutual positioning of absorption and radiation oscillators of the molecules was obtained by investigating the polarization spectra. It is concluded that since the second excitation triplet state cannot be higher than the second singlet state, it is probably either in resonance or close to it.

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USSR

MORGULIS, N. D. and PRZHONSKIY, A. M.

UDC: None

"Effect of Resonance Radiation on the Characteristics and Parameters of a Cesium Discharge Plasma"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 2, 1972, pp 344-348

Abstract: This experimental paper is devoted to the clarification of the role of resonance excitation, for the reaction $6S_{1/2} \rightarrow 6P_{1/2}$, during cesium atom ionization in a discharge plasma. The authors used the method of optical pumping, described in their earlier papers (Zhurnal eksperimental'noy i teoreticheskoy fiziki, 58, 1970, p 1873; Zhurnal tekhnicheskoy fiziki, 41, No 5, 1971) on bias lighting of the object for investigating the resonance radiation of cesium. As in those papers, they also used the two-sectional instrument consisting of an autonomous, controlled source of cesium resonance radiation and a constant, low-voltage arc discharge, contained in the first section, with an incandescent cathode in cesium vapor. They also used a transit-time mass analyzer, finding that the increase in ionization in the radiation is connected with the generation of atomic ions in the plasma.

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1/2 024
FILE--DECREASING THE LOSS OF NUTRIENT YEASTS DURING THE SEPARATION OF THE
FERMENTING MIXTURE -U-
AUTHOR--PSALOM, P.G.
COUNTRY OF INFO--USSR
SOURCE--FERMENT. SPIRIT. PROM. 1970, 36(1), 33-7
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--YEAST, CONTINUOUS CULTURE, MECHANICAL SEPARATION, FLOTATION
REAGENT, OLEIC ACID, FOOD TECHNOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1986/1712
CIRC ACCESSION NO--AP0103478
UNCLASSIFIED
PROCESSING DATE--11SEPT0
STEP NO--UR/0071/70/036/001/0033/0037

2/2 024
CIRC ACCESSION NO--AP0103478
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APP. IS DESCRIBED FOR THE SEPN. OF
YEASTS BY THE ADDN. OF NONSULFONATED FOAMING AGENT, SUCH AS OLEIC ACID.
THE YEAST IS COLLECTED BY FLOTATION. THE TEMP MUST BE SMALLER THAN
50-60DEGREES.

PROCESSING DATE--11SEP70

UNCLASSIFIED

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UNCLASSIFIED

USSR

UDC 621.791.753.93.037-52:669.71

PSARAS, G. G., Engineer, Zhdanov Heavy Machinery Plant

"Features of Automatic Welding of Aluminum With a Consumable Electrode
in an Argon-Oxygen Mixture"

Moscow, Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 21-23

Abstract: Difficulties arising in the automatic welding of aluminum and its alloys with a consumable electrode in an argon-helium mixture, such as the as development of pores in weld seams or a dark deposit on their surface, were experimentally investigated by beading and butt welding type AS aluminum plates, 16.25 mm and 32 mm thick. The results of a study of the effect of oxygen on the weld quality and weld seam parameters are discussed by reference to diagrams, oscillograms, and microstructures of weld seams. It was found that by welding in an Ar-He-mixture with an oxygen content of 2-4%, weld seams completely free from pores, dark deposits, and other defects can be obtained. Increasing the oxygen content up to 10% in the Ar-mixture, increases considerably the fusion depth and produces in two operations a quality weld of aluminum of 32 mm and greater thickness without splitting the edges. Five illustrations one table, six bibliographic references.

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USSR

UDC 621.791.042.9.034:669.71

PSARAS, G. G., Engineer, and ALEKSEYENKO, V. I. Engineer (Zhdanov Heavy Machinery Plant)

"Torches for Consumable-Electrode Welding of Aluminum and Its Alloys in Protective Gases"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 70, pp 46-47

Abstract: A description is given of a series of torches for the automatic welding of aluminum and its alloys in protective gases by electrode wires 0.5 to 5 mm in diameter. The torches were developed and tested under service conditions at the Zhdanov Plant by the authors. Torches having two damping chambers and nozzles combining cylindrical and conical sections, contracting downward, ensure a high-laminarity gas flow and the best protection. Relations are given for calculating the ratio of various diameters and areas of passage between the first and second chambers. Basic nozzle and spout dimensions are given in a table. Special features of the torch are two annular gas damping chambers, limited externally by the cylindrical part of the torch case and provided with axial apertures for gas input from the first into the second chamber, and radial apertures for gas input from the second chamber into the torch nozzle chamber.

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1/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MECHANIZATION OF THE WELDING OF CORNER JOINTS OF STEELS OF
DIFFERENT THICKNESS -U-
AUTHOR--SHCHETININA, V.I., PSARAS, G.G.
COUNTRY OF INFO--USSR
SOURCE--SVAR. PROIZVOD. 1970, (1), 38-9
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STEEL WELDING, WELD JOINT POROSITY, WELD EVALUATION, NICKEL
STEEL, AUTOMATIC WELDING, TITANIUM STEEL, WELDING FLUX, WELDING
ELECTRODE/(U)KH18N10T STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1377

STEP NO--UR/0135/70/000/001/0038/0039

CIRC ACCESSION NO--AP0107850

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UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107850

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS OF WELDING WERE DETD. OF ANGLE SEAMS OF STEEL KHI8N10T FORMED BETWEEN BANDS 150-600 IN SIZE AND 2-5 MM THICK, AS WELL AS BANDS 2-50 MM THICK. D.C., WELDING WIRE SV-06KH19N9T DIAM. 1.5-3 MM, AND FLUX AN-26 WERE USED. THE QUALITY OF THE WELDED JOINT DEPENDS MAINLY ON WELDING CONDITIONS, POSITION OF WELDED SPECIMENS AGAINST THE WELDING WIRE, AND THE GRANULATION OF THE FLUX. THE FORMATION OF PORES COULD BE AVOIDED, WHEN THE ANGLE OF THE CLEARANCE WAS 90-180 DEGREES AND THE RATIO OF THE THICKNESSES OF THE WELDED BANDS WAS 0.1-1.0. A NOMOGRAM WAS DESIGNED TO SHOW OPTIMAL WELDING CONDITIONS DEPENDING ON THE THICKNESS, DIAM. OF THE WELDING WIRE, AND THE ANGLE OF THE CLEARANCE. THE OPTIMAL WELDING RATE WAS 30-40 M-HR AND THE ARC POTENTIAL WAS 30-40 V. WELDED JOINT WERE RESISTANT TO INTERCRYST. CORROSION AND FREE OF DEFECTS AND PORES, AND CONTAINED 5-7 PERCENT FERRITE PHASE.

UNCLASSIFIED

Transformation and Structure

UDC 669.715'74

USSR

VENGRENOVICH, R. D., and PSAREN, V. I., Chernovtsy

"Nonequilibrium Crystallization and Structural Transformations During Heating of Al-Mo and Al-Cr Alloys"

Moscow, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 186-193

Abstract: This article contains a study performed to check the proposition that the earlier discovered laws of metastable crystallization, phase and structural transformations when heating nonequilibrium Al-Mn alloys are characteristic of other systems of alloys of aluminum with transition metals (Cr, Mo, V, Ti, etc.) and to discover the characteristic features of nonequilibrium crystallization and the mechanism of conversion of metastable phases into stable phases when heating nonequilibrium Al-Mo and Al-Cr alloys. X-ray micrography, thermographic, and metallographic methods were used to analyze the phase composition and structural state of the alloys.

The data presented in the paper clarify the physical processes of nonequilibrium crystallization and the formation of strongly supersaturated solid solutions based on aluminum, the mechanism of its decomposition, and conversion of the metastable states into stable states in Al-Mo and Al-Cr alloys. None-

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VENCRENOVICH, R. D., and PSAREV, V. I., Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 186-193

equilibrium crystallization of Al-Mo and Al-Cr alloys from the temperatures of the single-phase (liquid) and double-phase (liquid + crystals) regions takes place according to metastable diagrams: Al-Al₃Mo (Al-Mo system), Al-Al₁₁Cr and Al-Al₁₁Cr₂ (Al-Cr system) with the formation of metastable eutectics. The transformations of Al₃Mo → Al₅Mo in Al-Mo alloys and Cr₂Al₁₁ → CrAl₇, CrAl₁₁ → Cr₂Al₁₁ → CrAl₇ in Al-Cr alloys take place by separation of metastable compounds of excess atoms of molybdenum or chromium from the crystal lattice and subsequent rearrangement of it. The crystal lattice of the compounds CrAl₇, Cr₂Al₁₁, and CrAl₁₁ was deciphered. This permitted discovery of the mechanism of the indicated transformations when heating Al-Cr alloys. The increase in resistance to decomposition of a strongly supersaturated α-solid solution of aluminum is connected with the presence of the metastable phases (Al₃Mo, Cr₂Al₁₁, Al₁₁Cr) in the alloys and their conversion into stable phases (Al₅Mo, CrAl₇) taking place by separation of molybdenum or chromium atoms and partial solution of them in the α-solution.

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1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV76
TITLE--PHASE CHANGES IN NONEQUILIBRIUM CRYSTALLIZED ALUMINIUM CHROMIUM AND
ALUMINUM MANGANESE ALLOYS -U-
AUTHOR--(02)--VENGRENDOVICH, R.D., PSAREV, V.I. P

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 24(3), 540-6

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MANGANESE CONTAINING ALLOY, ALUMINUM ALLOY, CHROMIUM
CONTAINING ALLOY, INTERMETALLIC COMPOUND, POWDER METALLURGY, SOLID
SOLUTION, ALLOY PHASE TRANSFORMATION, EXOTHERMIC PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0336

STEP NO--UR/0126/70/029/003/0540/0546

CIRC ACCESSION NO--AP0126092

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126092

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING ISOTHERMAL HEATING OF NONEQUILIBRATED (COOLED DURING CRYSTN. AT 400-500DEGREES-SEC) AL,CR (CR 10, 15, AND 20 WT. PERCENT CR), AND AL,MN (12, 20, AND 25 WT. PERCENT MN) ALLOYS, THE TRANSFORMATION FROM UNSTABLE TO STABLE PHASE COMPN. AND STRUCTURE TOOK PLACE. THE FORMATION OF AN ALPHA SOLID SOLN. OF AL, STRONGLY SUPERSATD. WITH CR OR MN, IS THE RESULT OF THE PRESENCE OF METASTABLE PHASES AL SUB11 CR SUB2 OR AL SUB4 MN RESP.; THE LATTER PHASE WAS TRANSFORMED DURING HEATING ACCORDING TO: 6 AL SUB4 MN YIELDS 4 AL SUB6 MN PLUS 2MN. A SIMILAR TRANSFORMATION TOOK PLACE IN AL,CR ALLOYS. THESE PROCESSES WERE EXOTHERMIC AND WITH ONLY A SMALL CHANGE IN THE SP. VOL. OF THE ALLOY, SINCE THE COMPS. AL SUB4 MN AND AL SUB6 MN HAVE RHOMBIC STRUCTURE WITH ABOUT THE SAME D. THE INTENSITY OF THESE PROCESSES INCREASED WITH HIGHER TEMPS. OF ISOTHERMAL HEATING. THE OBSD. SUPERSATN. OF THE AL SOLID SOLN. COULD BE UTILIZED IN POWDER METALLURGY FOR THE SATN. OF AL WITH CR OR MN. FACILITY: CHERNOVITS. GOSUNIV., CHERNOVTSY, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--NATURE OF THE CRYSTALLIZATION OF ZN SUB4 SB SUB3 AND ZN SUB3 SB
SUB2 -U-
AUTHOR--(02)-PSAREV, V.I., DOBRVDEN, K.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 230-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CRYSTALLIZATION, ZINC COMPOUND, ANTIMONY COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0840 STEP NO--UR/0363/70/006/002/0230/0236
CIRC ACCESSION NO--AP0118016
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118016

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS FOR THE FORMATION OF THE INTERMEDIARY COMPOS. ZN SUB4 SB SUB3 AND ZN SUB3 SB SUB2 DURING THE CRYSTN. OF THE ZN-SB ALLOYS WITH A CONTENT OF 41.72-100 WT. PERCENT ZN WERE INVESTIGATED. ZN SUB4 SB SUB3 CRYSTALLIZES FOLLOWING THE CRYSTN. OF ZN SUB3 SB SUB2 IN PROPORTION TO THE ENRICHMENT OF THE MELTS WITH SB. PRIOR HEATING OF THE MELT HAS A SIGNIFICANT EFFECT ON THE QUANT.

CONTENT OF THE PHASES. THE EXISTENCE OF POLYMORPHIC TRANSFORMATIONS FOR ZN SUB3 SB SUB2 WAS NOT CONFIRMED. THE ORTHORHOMBIC LATTICE OF ZN SUB4 SB SUB3 IS CONSTRUCTED ACCORDING TO A "SUBTRACTIONAL" SOLID SOLN. TYPE (WITH A DEFICIENCY OF ZN ATOMS) BASED ON THE LESS STABLE ZN SUB3 SB SUB2 LATTICE.

FACILITY: CHERNOVITS. GOS. UNIV., CHERNOVTSY, USSR.

UNCLASSIFIED

PSAVKE, R.A.

183-6782
2 Jan 73

- 71 -

One of the first and foremost tasks in computer processing and linkage of medical data is to work out a reliable and effective method of identification in other words, each part of the information gathered should include an element that would permit referring it to a specific individual. These are the requirements of identification methods: uniqueness, that is 100 percent selectivity; universality, i.e., the possibility of application to all systems using demographic data; consistency, i.e., no variability for the lifetime of an individual; accessibility; economy (Acheson, 1968; Thierbach; Auger).

In the case of manual processing, complete surname, name, date and place of birth, and several other tags are compared, and on their basis a conclusion is reached as to whether the entries refer to the record of a single individual. This means of identification is not applicable to

One of the most important aspects of optimizing medical information is to solve the problem (with automated processing) of picking up data on hand or correlating data. The term correlation of medical data (medical record linkage, according to foreign authors) refers to integration of separately recorded (in different sources and at different times) information concerning the physical condition of an individual (or family). The actual concept of medical record linkage has been known since the last century. Selection of available facts was done manually to solve various public health and medical problems, however, in the case of manual data processing, linkage of data which requires quite laborious work to alphabetize large blocks of records was limited to simultaneous, specially organized work. Effective adoption in public health and medicine of modern computer technology opens up basically new opportunities and raises the matter of creating a system of medical record linkage (Dunn; Acheson).

Article by V.V. Janep, N.A. Andreyev, R.A. Psavke, K.E. Vitenko, B.Ye. Prilutskaya, Moscow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1972, published 6 May 1972, pp 63-67

PROBLEMS DEALING WITH LINKAGE OF MEDICAL RECORDS IN ACCORDANCE WITH DATA IN THE FOREIGN PRESS

UDC: 61:002.6

5

USSR

UDC 538.221+538.245

3

BELOV, K. P., YELYUTIN, O. P., KATAYEV, G. I., NIKITIN, S. A., PSHECHENKOVA, G. V., TARATYNOV, V. P., and SHUL'TE, L. A., Moscow State University imeni M. V. Lomonosov, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Study of Magnetic Properties of Rare-Earth Dysprosium-Holmium-Erbium Alloys at a Temperature of 4.2° K"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 36, No 6, 1972, pp 1247-1251

Abstract: The absence of systematic research on saturation magnetization for polycrystalline samples of rare-earth metals and their alloys makes it impossible to establish whether, in practice, they can be used as high-induction materials in fields up to 50 kOe at low temperatures. The purpose of the present article was to attempt to fill this gap. Pure rare-earth metals (obtained from the State Scientific Research and Planning Institute of the Rare Metals Industry) were studied, as well as dysprosium-holmium-erbium system alloys. Their magnetization curves were measured in fields up to 50 kOe at 4.2° K, values for coercive force and remanence were determined, and hysteresis loops were taken.

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USSR

UDC 669.861.5.864.018.58(088.8)

NIKELOV, K. P., YELYUTIN, O. P., NIKITIN, S. A., PSHECHENKOVA, G. V., SOKOLOV, V. I., TARTYNOV, V. P. [Central Scientific Research Institute for Ferrous Metallurgy imeni Bardin, Moscow University]

"A Magnetic Alloy"

USSR Author's Certificate No. 276424, Filed 21/04/69, Published 16/10/70.
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5, I760P).

Translation: The alloy contains Er 40-80%, Dy 20-60%, and differs from earlier known alloys in its higher values of saturation magnetism (28,500-32,800 gauss) at cryogenic temperatures.

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USSR

UD: 669.865.866.018.58 (088.8)

NIKELOV, K. P., YELYUTIN, O. P., NIKITIN, S. A., PSHECHENKOVA, G. V., SOKOLOV, V. I., TARTYNOV, V. P. [Central Scientific Research Institute for Ferrous Metallurgy imeni Bardin, Moscow University]

"A Magnetic Alloy"

USSR Author's Certificate No. 276423, Filed 21/04/69, Published 16/10/70.
(Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5, 1759P).

Translation: The alloy contains Er 20-80%, Ho 20-80%, and differs from the earlier known Fe-Co alloy (24,600 gauss) in its higher values of saturation magnetism (28,500 - 32,800 gauss) at cryogenic temperatures.

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Rare Metals

UDC 669.018:669.017.538.23

USSR

BELOV, K. P., YELYUTIN, O. P., NIKITKIN, S. A., PSHECHENKOVA, G. V., SOKOLOV, V. I., and TARATYNOV, V. P., Moscow State University imeni M. V. Lomonosov and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Magnetic Hysteresis of Rare-Earth Metals and Alloys"

Sverdlovsk, Fizika Metallov i Metallovedniye, Vol 30, No 6, Dec 70, pp 1146-1150

Abstract: A study was made of the hysteresis loops of rare-earth metals and alloys which possess a magnetic structure of the ferromagnetic spiral type (Dy-Er and Ho-Er). Ingots of rare-earth metals with a purity of 99.5% were made in a vacuum-arc zone furnace with a nonconsumable tungsten electrode and a water-cooled copper hearth. Melting was done under argon at a pressure of 300-400 mm Hg in two passes with rotation of the ingots. Samples 2.5 mm in diameter and 28 mm long were machined from the ingots and vacuum annealed for 24 hours at a pressure of 10^{-3} mm Hg. The magnetic characteristics were obtained in a superconducting solenoid (50 kilooersted) at 4.2°K. In this field the hysteresis properties of gadolinium, terbium, dysprosium, holmium,

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USSR

BELOV, K. P., et al, Fizika Metallov i Metallovedniye, Vol 30, No 6, Dec 70, pp 1146-1150

and erbium and alloys Dy-Er and Ho-Er were studied. A new type of hysteresis was observed in the alloys manifested by failure of the ferromagnetic spiral in a strong field. It was established that despite a vast magnetic anisotropy, cast samples of rare-earth metals and alloys, even under magnetization in a field of 50 kilooersted at 4.2°K, possess comparatively small values of the coercive force which does not exceed 10^3 oersted.

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USSR

UDC 611.42.98.014.477.019

PSHEGORNIITSKIY, B. I., Chair of Normal Anatomy, First Leningrad Medical
Institute imeni Academician I. P. Pavlov

"The Effects of Accelerations on Lymph Vessels and Nodes in the Hind
Extremities of Rabbits"

Leningrad, Arkhiv Anatomii Gistologii i Embriologii, Vol 60, No 3, Mar 71,
pp 80-85

Abstract: In an experimental study in which rabbits were centrifuged for various periods and in various positions, it was found that accelerations can cause long-lasting changes in the lymph system. Lymphographs done on the hind legs of experimental animals revealed that the centrifugation caused enlargement and convolution of lymph ducts, formation of collaterals, and enlargement of lymph nodes. These changes were most pronounced when the acceleration vector acted in the head-tail direction.

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CRYLFORMALDEHYDE TANNING -U-
AUTHOR--(02)-PSHEMENSKAYA, V.A., MIKHAYLOV, A.N.
COUNTRY OF INFO--USSR
SOURCE--KUZH. DBUV. PROM. 1970, 12(3), 36-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FORMALDEHYDE, FREEZING, LEATHER, WEAR RESISTANCE, TANNING
MATERIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1736 STEP NO--UR/0498/70/012/003/0036/0038
CIRC ACCESSION NO--AP0125357

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125357

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TANNING OF COWHIDES AND SHEEPSKINS WITH HCHO FOLLOWED BY FREEZING (AT MINUS 10 DEGREES) RESULTED IN DECREASED LEATHER STRENGTH WHICH, HOWEVER, WAS RESTORED BY TREATING THE LEATHER WITH NH SUB4 HSO SUB3 FOR 30-60 MIN. THE FREEZE TANNED LEATHER SOLES EXHIBITED GOOD WEAR RESISTANCE.

UNCLASSIFIED

USSR

PSHENICHNAYA, L. E. and YAKOVLEVA, I. N.

"One Method of Using the Method of Representation of an Object as a System"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 55-59 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V825).

Translation: The task is stated of detecting errors in the semantic dictionary of the BIT information retrieval system. The errors are interpreted as phenomena disrupting the structure of the dictionary. Thus, the problem is reduced to determination of characteristics describing the semantic dictionary as a system. The article describes a procedure which can be used to produce a final set of formal characteristics describing this dictionary as a systems object.

Ye. Burgina

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USSR

PRISTAVKO, L. P. and PSHENICHNAYA, L. E.

"Systems Analysis of the Semantic Dictionary of the BIT Information Retrieval System"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 48-54 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V824).

Translation: During the process of operation of the BIT IRS, it becomes necessary to make changes in its dictionary. This article studies the elements of the dictionary which can be changed and describes the sequence of performance of dictionary changes. The dictionary of the BIT IRS is looked upon as a constantly interacting and internally dependent group of parts forming a single system. In conclusion, it is suggested that the method of indexing of the dictionary be changed in order to decrease the volume of work required to alter it.

Ye. Burgina

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USSR

UDC 51.801

PSHENICHNAYA, L. E.

"Role of a Recurrent Word in Texts of Definitions of Terms"

V sb. Mat. i inform. probl. prognozir. i upr. naukoy (Mathematical and Information Problems of Forecasting and Control of Science --- collection of works), Kiev, 1971, pp 301-309 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V699)

Translation: By analyzing several examples of texts of definitions of terms from the point of view of expediency of retaining a repeated meaning, the author arrives at the conclusion "that a recurrent word in the semantic-syntactic structure of the text is used to break the cycle in syntactic relations," the presence of which is inadmissible from the point of view of human understanding of the text.

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USSR

UDC 51.801

PSHENICHNAYA, L. E.

"Procedure for Processing Terminological Word Combinations when Compiling the Information Retrieval Language Dictionary of Semantic Codes"

V sb. Mat. i inform. probl. prognozir. i upr. naukoy (Mathematical and Information Problems of Forecasting and Control of Science — collection of works), Kiev, 1971, pp 279-289 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V701)

Translation: A number of examples of distinguishing free and nonfree terminological word combinations in the light of compiling a dictionary of formalized semantic languages are discussed.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--USE OF X RAY FLUORESCENCE ANALYSIS WITH RADIOISOTOPE FOR
DETERMINATION OF CHEMICAL COMPOSITION OF ROCK NO ORES IN MOTION -U-
AUTHOR--(04)-PSHENICHENYY, G.A., OCHKUR, A.P., FLOTNIKOV, R.I., GOGANOV,
D.A.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. (USSR); 28: 67-8 JAN. 1970
DATE PUBLISHED----JAN70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--MINERAL FORMATION ANALYSIS, FLUORESCENCE SPECTRUM, RADIOACTIVE
ISOTOPE, ZIRCONIUM ORE, TITANIUM OXIDE, METALLURGIC PROCESS CONTROL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0212 STEP NO--UR/0089/70/028/000/0067/0068
CIRC ACCESSION NO--AP0105288
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105288

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTIONS ARE GIVEN OF THE DESIGN AND PERFORMANCE OF A RADIOISOTOPE X FLUORESCENCE METHOD FOR ORE SAMPLE ANALYSIS ON A CONVEYOR BELT. TESTS WERE MADE OF CONTINUOUS SAMPLE CONTROL OF TI AND ZR ON THE CONVEYER AND COMPARED WITH THE LABORATORY DATA. SOURCE OF COMBINED PRIME55 FE (5.9 KEV) AND PRIME109 CD (22 KEV) WERE USED FOR EXCITATION OF THE K SERIES OF TITANIUM (TIK SUBALPHA EQUALS 4.5 KEV) AND ZIRCONIUM (ZRK EQUALS 15.7 KEV). RESULTS OBTAINED SHOWED THE METHOD SUITABLE FOR DETERMINING THE ORE CONTENT OF ELEMENTS WITH ATOMIC NUMBER OF 20 HIGHER, WHOSE LUMINESCENCE IS SUFFICIENTLY STRONG TO PENETRATE 5 TO 10 CM THICK AIR LAYERS.

UNCLASSIFIED

Acc. Nr:

490049826

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:

UR0467

P

93943j Recrystallization of powdered graphite from the Botogol deposit. Yurkovskii, I. M.; Pshenichkin, P. A. (USSR). *Khim. Tverd. Topl.* 1970, (1), 124-31 (Russ.). The process of recrystn. of powd. native graphite, 7-10% ash contg. oxides of Si, Fe, Ca, Mg, etc., was studied at 2200-3000° by x-ray and microscopic analyses. At 2200-2400° crystals grow by absorption of highly dispersed particles. The crystals are single crystals. Above 2500° crystals grow by coalescence and condensation from the gas phase. Mech. growing together of similarly oriented crystallographic planes also occurs. The dispersion increased above 2700°.

GBJR

13VK

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REEL/FRAME

19801748

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USSR

UDC 541.13

BURSHTEYN, R. KH., PSHENICHNIKOV, A. G., TARASEVICH, M. R., CHIZMADZHEV, YU. A., and CHIRKOV, YU. G., Institute of Electrochemistry Academy of Sciences USSR, Moscow

"Moisture Exchange in Hydrogen-Oxygen Cell with a Capillary Membrane. II. Cells with a High Moisture Capacity"

Moscow, Elektrokimiya, Vol 9, No 1, Jan 73, pp 107-115

Abstract: Analysis of the moisture exchange process in hydrogen-oxygen element with a capillary membrane and with electrodes exhibiting buffering capacity makes it possible to determine certain advantages of the "open" system (moisture exchange occurs on both electrodes) in comparison to the "closed" system (the moisture exchange occurring only at the hydrogen electrode). When the moisture exchange is sufficiently large in open systems (in contrast to the closed systems), the volume of the liquid in the electrode does not depend on the current charge. Therefore in such a case there are no limitations in regard to the current magnitude in the element.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHEMISORPTION AND ELECTRO OXIDATION OF HYDROCARBONS ON PLATINUM. X.
PARTICLES FORMED IN THE CHEMISORPTION OF PROPANE, AS INDICATED BY THE
AUTHOR--(02)-BOGRACHEV, A.M., PSHENICHNIKOV, A.G.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA, FEB. 1970, 6, (2), 190-193

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMISORPTION, PROPANE, PLATINUM ELECTRODE, HYDROGENATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1986

STEP NO--UR/0364/70/006/002/0190/0193

CIRC ACCESSION NO--AP0125575

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125575

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT, THE NATURE OF THE PARTICLES FORMED IN THE CHEMISORPTION OF PROPANE ON A PT ELECTRODE WAS STUDIED BY THE CATHODIC HYDROGENATION METHOD. THE KINETICS OF THE HYDROGENATION PROCESS OBEYED LAWS SIMILAR TO THOSE HOLDING FOR REACTIONS INVOLVING PARTICLES ADSORBED ON A UNIFORMLY INHOMOGENEOUS SURFACE. ON CATHODIC HYDROGENATION THESE PARTICLES WERE DESORBED IN THE FORM OF MOLECULAR PROPANE (THE CHEMISORPTION CHARACTERISTICS INDICATED THAT PARTICLES CONTG. THREE C ATOMS WERE PREFERENTIALLY HYDROGENIZED).

UNCLASSIFIED

USSR

UDC 621.398

PSHENICHNIKOV, A.M., DMITRIYEV, V.F., KHAZATSKIY, V.E., Candidates of Technical Sciences, and KLIMENKO, V.I., Engineer

"New Telemechanical Systems for Constructing Information and Control Systems"

Moscow, Pribory i Sistemy Upravleniya, No 12, Dec 70, pp 1-3

Abstract: Two series of telemechanical systems have been developed under the leadership of TsNIIKA [State All-Union Central Scientific Research Institute of Complex Automation] to transmit data and commands among physically separated facilities: the Nart-67 series and APD series. Nart-67's serve continuous-output control systems; APD's, discrete output.

In the Nart-67 series the TM-100, serving relatively slow processes (dispatcher control of pipelines, gasfields, irrigation systems), connects a control post with up to 20 check points. Transmitting speed is 50 bauds. Two parameters are sent per second in cyclic telemetry. Telesignalization lag when an installation's status changes does not exceed 25 seconds. Remote control commands are sent in 4 seconds. Range is up to 2,000 km. Basic telemetry error equals 1.6 percent. Probability of receiving a false message is 10^{-8} ; a command, 10^{-12} . The TM-100 is made at the ZTA [Telemechanical Apparatus Plant] at Nal'chik.

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USSR

PSHENICHNIKOV, A.M., et al., Moscow, Pribory i Sistemy Upravleniya, No 12, Dec 1970, pp 1-3

The TM-300, serving intensive industries, such as mining, metallurgy, and chemicals, connects a control post with up to 25 check points over two-wire line at distances up to 220 km. Telemetry transmission speed is 25 parameters per second; telesignalization is sent in 0.6 second, remote control commands in 0.3 second; basic telemetry error is 1.6 percent for digital, 2.5 percent for analog data. The TM-300 is produced at the ZTA.

The TM-500, which provides a higher degree of dispatcher control to power associations at unlimited range, connects the control post with check points by high-frequency multiplexing. Time for sending telemetry and telesignalization at 50 bauds is 4 seconds, or 0.7 second at 300 bauds. Switching to a backup channel is automatic. The TM-500 prototype was made under the code name "Stimul" at the TsNIIKA Experimental Plant. Many Stimul sets are used in the power system to good economic effect.

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USSR

PSHENICHNIKOV, A.M., et al., Moscow, Pribory i Sistemy Upravleniya, No 12, Dec 70, pp 1-3

The TM-200 (Rayon), developed at the Automation Institute (Kiev), provides regional dispatcher control of pipelines, irrigation systems, and municipal services.

The TM-600 (Nefte), which serves dispersed gasfields, was developed by research and planning institutes which specialize in complex automation of the petroleum and gas industries.

APD equipment comprises four groups, each meeting a different type of need.

With the first APD series, discrete production data is collected in departments or shops and transmitted, preferably by keyboard, to a post where it is concentrated and given initial processing. Data transmitting speed can vary from 3 to 7 characters per second. Data is sent over nonmultiplexed wire lines at distances up to 15 km. Validity ordinarily is no greater than 10^{-5} per character.

With the second APD series, automatically prepared data is sent from point of initial collection and processing over telephone or telegraph lines to the

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USSR

PSHENICHNIKOV, A.M., et al., Moscow, Prihory i Sistemy Upravleniya, No 12, Dec 70, pp 1-3

computing centers of large combines, dispensing with the need for small, ineffective computing centers. Transmitting speed is 5-8 characters per second by telegraph, 15-25 or 80-120 by telephone line. Either commutated or noncommutated lines can be used. The data should go directly into the computer or, in case of computer outage, onto punched tape. Validity of not less than 10^{-6} per character is required.

The third APD group exchanges data among computing centers, allowing better use of the computer pool and raising reliability. Two types of equipment can be involved, depending on the amount of machine time spent on raising reliability. Speeds of 100-140 or more characters per second and validity of not less than 10^{-7} per character are required.

The fourth APD group, intended for mass servicing (such as automated sales of train or plane tickets, data-handbook service), works with a computer in real time on a question-and-answer mode, using either telephone or telegraph lines. Validity is similar to that of the second APD group.

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USSR

PSHENICHNIKOV, A.M., et al., Moscow, Pribory i Sistemy Upravleniya, No 12, Dec 70, pp 1-3

The APD-MM, for example, belonging to the third APD group, connects BESM-4 computers. "Shuffling" with steps equal to word length reduces the machine time required to raise validity (no more than 2 percent). The Hamming Code is used to detect and correct errors.

The APD-3M is intended for radial communication with computers where data volume is small. Transmission speed is 80-120 characters per second, modulation speed is 1200/600 bauds. Validity is 10^{-6} per character where message distortion probability is 10^{-3} . It has decision feedback.

The APD-1U, intended for mass servicing, works in real time in a question-and-answer mode and has decision feedback characterized by identical speeds in a semiduplex channel. Message protection is provided, ensuring validity of 10^{-7} per character. Speed is 1200/600 or 50/75 bauds.

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USSR

UDC 681.326:621.39

PSHENICHNIKOV, A. M., Candidate of Technical Sciences, and EPSHTEYN,
A. D., Engineer

"Operation Algorithms of Integrated Remote Control Systems"

Moscow, Priory i Sistemy Upravleniya, No 2, Feb 70, pp 7-12

Abstract: The operation algorithm is described for the control center equipment of an integrated multidirectional remote control system. This includes the operation algorithm of the control center device during the request for remote signaling, the transmission of remote control instructions, the request for telemeterings of integral parameter values, and the request for telemeterings of current parameter values. Operation algorithms are also given for the equipment of the control centers of the integrated remote control system, including the operation algorithm during the transmission of remote signaling, the receipt of remote control instructions with decision feedback, the transmission of telemeterings of integral parameter values. A study of the operation algorithm of the control center device shows

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- USSR

PSHENICHNIKOV, A. M., Priory i Sistemy Upravleniya, No 2, Feb 70,
pp 7-12

that there is little difference in operation over tree and radial communication lines. The form of the algorithm, for all practical purposes, does not depend on the coding method and is identical for long- and short-range remote control devices. The principal operations in the request for and transmission and receipt of various types of information coincide. These features of the operation algorithms for an integrated remote control device show that devices of this type can be standardized, a capacity which is important in the construction of third-generation devices using microelectronic circuits.

2/2

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USSR

UDC 576.851.71.095.6

PSHENICHNOV, R. A. and KOLOTOV, V. M., Perm' Institute of Vaccines and Sera

"Possible Existence of a 'Latent' Period in the Development of Rickettsia prowazeki. I. Infectiousness of the Vector During the Early Stage of Infection in the Absence of Cellular Forms of the Agent"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 117-121

Abstract: In lice infected with low doses of R. prowazeki, the typical cellular forms of the agent could not be detected by light or fluorescence microscopy as long as 8 to 10 days later. When large doses were used, typical Rickettsia were first detected 4 to 6 hours after infection, after which they disappeared completely. This "latent" period was marked by several changes in affected gastrointestinal tissues of the vector: enlargement of individual cells and nuclei, basophilia of the protoplasm, and appearance of dark violet grains which were transformed after 2 or 3 days into comparatively large formations that could not be distinguished from the typical cellular forms of the causative agent. It is conjectured that during the first or "latent" period of infection, Rickettsia penetrate

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USSR

PSHENICHNOV, R. A. and KOLOTOV, V. M., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 117-121

into susceptible tissue and then disintegrate into tiny subunits. These alter the metabolism of the affected cells and induce the synthesis of the first cellular forms of the agent, which then multiply by binary fission.

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USSR

UDC 621.375.826

KUDRYASHOV, V. A., MATVEYEV, I. N., and PSHENICHNIKOV, S. M.

"Statistical Characteristics of Laser Receivers With Frequency Conversion Under Noise Conditions"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics -- collection of works), Vyp.2, Novosibirsk, 1972, pp 354-359 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D143)

Translation: None.

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USSR

UDC 621.378.325

KUDRYASHOV, V.A., MATVEYEV, I.N., PSHENICHNIKOV, S.M.

"Effect Of Predetector Conversion Of Carrier Frequency On The Sensitivity Of Infrared Band Receivers"

Kvantovaya elektronika, Moscow, No 5, May 71, pp 140-142

Abstract: The statistical characteristics are considered of an optical receiver with a parametric carrier-frequency converter. It is shown that the noise index of such a receiver can be minimized. Formulas and the results of computation of the noise of concrete variants of infrared-band receivers are presented. Curves are shown of the dependence of the noise index of a receiver with a parametric frequency converter on the pump power in the case of conversion of radiation from the near-infrared region in a KDP crystal 1 cm long. Received by editors, 22 Apr 71. 1 fig. 3 ref.

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USSR

UDC 621.373:530.145.6

PSHENICHNIKOV, V. I., SHEMYAKIN, Yu. V.

"A Pulse Generator Based on Dischargers"

Elektron. tekhnika. Nauch.-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific and Technical Collection. Gas Discharge Devices), 1971, vyp. 2(22), pp 112-115 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11D181)

Translation: The schematic circuit is worked out and a pilot model is made of a pulse generator based on type R-24 controllable dischargers. This pulse generator provides a pulse voltage of 10-20 kV across the load at a pulse current of 1000-1500 A with a prf of up to 10 Hz. Operation of the pulse generator is based on the method of repeated voltage multiplication. A pulse generator circuit based on controllable dischargers can be used for supply to pulse radars and in other investigations. The generator has small overall dimensions low weight, and low cost. Resumé.

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USSR

UDC 616.988.75-022.14-092.9-07

RITOVA, V. V., LARIONOV, A. S., MOISEYEV, V. P., and PSHENICHNIKOV, V. V.
Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences
USSR and Second Moscow Medical Institute imeni N. I. Pirogov

"Experimental Mixed Influenza-RS-Virus Infection in White Mice"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 12, 1971, pp
31-33

Abstract: Mice were infected with respiratory syncytial (RS) virus, influenza
A₂ Hong Kong 68 virus, or both by intranasal injection or aerosol inhalation.
The course of the resulting infection was more severe when the animals re-
ceived nasal injections of the material. The death rate was higher in the
animals receiving both viruses simultaneously than in those given only one.
The death rate was still higher when the animals received RS virus first and
influenza virus 18 hours later, but not vice versa. Injected with placebo,
all the mice, as in the control, survived.

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USSR

UDC 616.981.71-078

PSHENICHNOV, P. A. and YAROSHENKO, L. K., Rickettsia Laboratory, Perm
Scientific Research Institute of Vaccines and Sera; Perm' Medical Institute

"Use of Liquid and Dry Erythrocyte Diagnosticums in the Cysteine Test for
Differentiation of Primary and Secondary Infections Caused by Rickettsia
prowazeki"

Moscow, Laboratornaya Delo, No 12, 1971, pp 738-740

Abstract: A detailed description is presented of the liquid erythrocyte
diagnostic method for typhus. In primary infection, the level of IgM, and in
secondary infection, the level of IgG increased in the serum. IgG anti-
bodies were resistant to reducing agents (2-mercaptoethanol, ethanethiol,
cysteine), while IgM antibodies were not. A decrease of hemagglutinin level
by 88-90% in serum pretreated with cysteine indicates an increase of IgM
antibodies. If the level of hemagglutinin was only one half of the original,
it meant an increase of the cysteine-resistant IgG. With this method pre-
liminary results can be obtained in 4-5 hr, and final results, in 16-18 hr.
The suggested method was tested on 236 rabbits, 423 guinea pigs, and 70
human sera.

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1/2 017
TITLE--EXPOSURE OF ETCHING DIAGRAMS IN FERROSILICON -U-
AUTHOR--PSHENICHNOV, YU.P. *P*
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(1), 51-2
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--ETCHED CRYSTAL, CRYSTAL STRUCTURE, FERROSILICON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0599
CIRC ACCESSION NO--AP0107196
STEP NO--UR/0032/70/036/001/0051/0052
UNCLASSIFIED

2/2 617

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0107196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY THE EXPOSURE AND DEVELOPMENT OF ETCH PITS WHICH EXHIBIT GEOMETRICALLY REGULAR SHAPES, IN MATERIALS SUCH AS FERROSILICON, IT IS POSSIBLE TO DET. CRYSTALLOGRAPHIC ORIENTATION. A SAMPLE WHICH HAS BEEN PLASTICALLY DEFORMED WAS ELECTROPOLISHED AT A.C.D. OF 15 A-CM PRIME2 FOR 1 MIN IN A SOLN. COMPRISING H SUB3 PO SUB4 (D. EQUALS 1.86-1.88) 800, CRO SUB3 130, H SUB2 O, 70 G, WITH A STAINLESS STEEL CATHODE AND AN ANODE, CATHODE DISTANCE OF 40 MM. AFTER RINSING IN TAP WATER, BUT WITHOUT DRYING, THE SAMPLE IS ELECTROLYTICALLY ETCHED IN A 5PERCENT AQ. SOLN. OF HNO SUB3 FOR 30 SEC AT ROOM TEMP. AT A C.D. OF 0.05 A-CM PRIME2. DISLOCATION ETCH PITS WERE FOUND RUNNING LENGTHWISE IN GRAINS ALONG STRAIGHT LINES AND TERMINATING AT THE GRAIN BOUNDARY. THESE ETCH PITS USUALLY OCCUR OVER SLIP LINES. ONE OF THE FIGURES DEPICTS A RATHER RARE OCCURRENCE, THE APPEARANCE OF A ROSETT SHAPED DISLOCATION ETCH PIT. THIS TYPE OF DISLOCATION OCCURS WHEN THE ANGLE BETWEEN THE GRAIN BOUNDARIES IS SIMILAR TO 20DEGREES AND USUALLY OCCURS IN A DEPRESSION SUCH AS CAUSED BY AN INDENTOR. IN THIS CASE, HOWEVER, THERE ARE NO KNOWN MECH. CAUSE.

UNCLASSIFIED

Power

USSR

UDC[621.362:538.4].001.24

POPYRIN, L. S., PSHENICHNOV, N. N., ROSHCHIN, A. M., KHOKHLOV, L. K.,
SHISHKOV, Ye. V.

"Calculated Studies of Open-Cycle Power Magnetohydrodynamic Generators"

V sb. Teplo tekhn. probl. pryamogo preobrazov. energii (Heat-Engineering
Problems of Direct Energy Conversion--Collection of Works), Issue 2, Kiev,
"Nauk. dumka," 1971, pp 3-11 (from RZh--Elektrotekhnika i energetika, No
12, Dec 1971, Abstract No 12A173)

Translation: The results are presented of calculations on an electronic
computer of the effect of finite (scalar) conductivity on the characteristics
of a magnetohydrodynamic (MHD) channel, its length and profile, and also the
results of a calculation of the cost of the MHD channel and the SP [?inherent
parameters] of the magnetic system as a function of the finite conductivity
and the temperature of heating up of the oxidant. The calculations were
made with the aid of a mathematical model, worked-out at the Siberian Power
Engineering Institute of the Siberian Department of the Academy of Sciences,
USSR, for thermodynamic and technical-economic studies of composite power
plants with open-cycle MHD. 3 ill. 2 tab. 2 ref.

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AA0051858

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

242273 TEST EQUIPMENT FOR MEASUREMENT OF AMPLITUDE
AND PHASE FLUCTUATION containing HF generator
modulator, IF generator and phase shifter. The
measurement set contains HF phase detector and LF
analyser. To eliminate the effect of noise in the
test equipment the outlet of the generator is
connected via phase shifter to the mixer and to
the input of phase of amplitude modulator. The
second input to modulator is associated with LF
generator.

29.3.68 as 1228784/26-9. A.N.MYALIK et al.(11.9.69)
Bul 15/25.4.69. Class 21c. Int.Cl.2 O1r.

AUTHORS: Myalik, A. N.; Pshenichnikov,
S. M.; Umnov, A. F.

19820293

USSR

UDC 546(83-882)261:548.55

FUNKE, V. F., PSHENICHNYI, I. V., KRUGLOV, V. N., and KHARKHARDIN, YE. D.

"Substructure and Nature of the Destruction of Zirconium and Niobium Single Crystals"

Moscow, Neorganicheskiye Materialy, Vol 9, No 12, 1973, pp 2151-2155

Abstract: Results are presented from a study of the substructure, brittleness, plasticity, and microhardness relative to the crystalline characteristics of ZrC and NbC single crystals at room temperature. Analyses were made using selective etching and micro-x-ray techniques; analytical procedures are given for each parameter. These crystals are anisotropic with regards to brittleness, plasticity, and microhardness. The planes of maximum and minimum values are given. The degree of brittleness is relative to the orientation of the basal layers and increases in the order (111), (110), and (100). NbC is characterized by a higher degree of plasticity and a smaller degree of anisotropy in the rigidity among the crystallographic surfaces than for the ZrC.

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USSR

UDC: 8.74

PSHENICHNYY, B. N., ONOPCHUK, Yu. N., MARCHENKO, D. I.

"Elaboration of the Structure of a Unified Digital Model of Dynamic-Logic Objects"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical Methods of Studying and Optimizing Systems--collection of works), Kiev, 1971, pp 232-249 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V605)

[No abstract]

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USSR

UDC 616.935-022.931-078.73:576.8.073.4

SOLOV'YEV, M. M., and PSHEVICHNYI, G. S., Department of Medical Protozoology, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martynovskiy, Ministry of Health USSR, and Chair of Infectious Diseases, Kiev Medical Institute.

"Examination of Sera from Amebic Dysentery Patients Using the Fluorescent Antibody Method"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971, pp643-647

Abstract: The indirect fluorescent antibody method with Evans blue was used to study sera from six confirmed cases of amebic dysentery. The antigen was prepared from the BN, A, and K strains of *Entamoeba histolytica*. In test tubes with 48-hour cultures, most of the amebas were concentrated in the sediment together with starch and bacteria. However, many of the organisms remained on the sides of the test tubes and these were used to prepare the antigen because they were free from impurities. Five of the sera in tests with antigen from the BN strain reacted positively in titers of 1:80 and 1:160. However, in tests with antigens from the A and K strains, only 1 of the 4 reacted positively (titers of 1:80 and 1:40); none of the other sera fluoresced even in a 1:10 dilution. Thus, there were antigenic differences between *E. histolytica* strains studied. Whether they were due 1/2

USSR

SOLOV'YEV, M. M., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971, pp 643-647

to original qualitative differences or to prolonged culturing of the A and K strains remains unclear. At any rate, the negative results with antigens from these strains underline the need to make a careful choice of the strain when using the fluorescent antibody technique as a diagnostic aid.

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USSR

UDC: 621.319.4(088.8)

PSHENICHNYY, I. S., BUDKIN, I. A., ALEKSEYEV, V. L., STAZHKOV, V. N.,
KORNEYEV, A. D., USPENSKIY, D. N.

"A Device for Testing Capacitors With Respect to Electric Parameters"

USSR Author's Certificate No 283416, filed 17 Apr 69, published 10 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V384 P)

Translation: This Author's Certificate introduces a device for testing capacitors with respect to electric parameters. The device consists of a vibration hopper with power supply, a transport mechanism, contact groups, and memory and sorting elements. As a distinguishing feature of the patent, automatic operation of the device is provided by making the memory element in the form of a light display panel with signal lamps in a number corresponding to the number of capacitors to be tested, and the analyzing element is a pointer with a photocell located above the lamps and kinematically coupled to the transport disc and providing electrical control of the sorting unit.

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1.2 : 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--ACYL PEROXIDES. XXVIII. REACTIONS OF VALEROYL AND CAPROYL
PEROXIDES WITH MERCUROUS SALTS -U-

AUTHOR--(04)-OLDEKOP, YU.A., MAYER, N.A., PSHENICHNYY, V.N., IZMAYLOVA,
A.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 308-11

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PEROXIDE, ORGANOMERCURY COMPOUND, THERMAL
DECOMPOSITION, BUTANE, BUTENE, HEAT EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1985/1408

STEP NO--UR/0079/70/040/002/0308/0311

CIRC ACCESSION NO--AP0101498

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING VALEROYL PEROXIDE (I) WITH MERCUROUS VALERATE OR BENZOATE IN C SUB5 H SUB6 AT 80DEGREES OR IN BUCO SUB2 H (AT 98DEGREES), OR HEATING CAPROYL PEROXIDE (II) IN MERCUROUS CAPROATE OR BENZOATE IN C SUB6 H SUB6 OR IN CAPROIC ACID, RESULTED LARGELY IN FORMATION OF 30 TO 40PERCENT HG AND UP TO 32PERCENT CORRESPONDING ALKYL MERCURY SALTS. ALSO FORMED WERE CO SUB2, THE ALKANE AND ALKENE CORRESPONDING TO THE RADICAL OF THE PEROXIDE EMPLOYED, WITH CO, AND MERCUROUS SALTS. THE NEEDED MERCUROUS VALERATE WAS PREPD. FROM MERCUROUS NITRATE AND NA VALERATE IN AQ. MEDIUM. THUS, THE REACTION OF THE RADICALS R TIMES FROM THE PEROXIDE WITH MERCUROUS ACYLATES YIELD RHGO SUB2 CR'. REACTION OF I WITH THE MERCUROUS SALTS GAVE BUHG SALTS, INDICATING THAT THE BU TMES RADICALS FORMED IN THE PEROXIDIC DECOMP. ARE ABLE TO REACT WITH MERCUROUS SALTS AS INDICATED ABOVE. THESE RADICALS ALSO UNDERGO THE USUAL DISPROPORTIONATION AND CLEAVAGE OF H ATOMS FOR THE SOLVENT; IN THESE REACTIONS BUTANE GREATLY EXCEEDED BUTENES IN THE REACTION MIXT. IN REACTION OF II WITH THE MERCUROUS CAPROATE IN C SUB6 H SUB6, THE YIELD OF CO SUB2 WAS ALWAYS GREATER THAN FOUND FOR OTHER REACTIONS OF PEROXIDES WITH OTHER MERCUROUS SALTS; THE SOURCE OF THE ADDED CO SUB2 WAS MERCUROUS CAPROATE, WHICH WITH PEROXIDE GAVE CO SUB2 PLUS C SUB5 H SUB11 HGO SUB2 C SUB5 H SUB11.

UNCLASSIFIED

USSR

UDC: 621.376.5(088.8)

GNEDIN, I. N., PSHENICHNIKOV, V. I.

"A Pulse Modulator"

USSR Author's Certificate No 263664, filed 6 Oct 67, published 12 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D465 P)

Translation: This Author's Certificate introduces a pulse modulator which contains a high-voltage DC supply with charging choke and isolating diode, an ionic commutator based on a thyatron with ignition oscillator, an accumulator shunted by a clipper element, and a load. To increase the prf of the shaped pulses, the modulator is equipped with an additional damping accumulator which is connected in parallel with the commutator through an additional isolating diode connected in the charging circuit between the choke and the main accumulator. V. P.

USSR

UDC 620.178.15

KISELEV, YU. A., FRANKENZON, A. G., and PSHENICHNIKOV, YU. V.,
Novosibirsk Aviation Plant imeni Chkalov, Siberian Scientific Research
Institute of Metrology

"Effect of Surface Cleanliness and Form of Products on Results of Hardness
Measurement"

Moscow, Zavodskaya Laboratoriya, No 4, 1973, pp 459-461

Abstract: A study was made of the dependence of Brinell, Rockwell, and Vickers hardness numbers of 30KhGSA, 30KhGSNA, VNS-5, and 45 brand steels and of V95 and AK4-1 aluminum alloys on the non-parallelism of the supporting and the investigated surfaces, the processing cleanliness, and the radius of curvature of finished products. The results are discussed by reference to diagrams and tabulated data showing the hardness by HB, HRC, HRB, HRA, and HV scales determined as an arithmetic mean from five impressions. The results indicate the existence of allowable angles of non-parallelism of surfaces and of their curvature by measuring the Rockwell hardness; they also reflect the influence of

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USSR

KISELEV, YU. A., Zavodskaya Laboratoriya, No 4, 1973, pp 459-461

surface cleanliness in hardness measuring by Rockwell, Brinell, and Vickers methods. The effect of cleanliness, non-parallelism, and curvature of the surface on the deviation of hardness numbers from actual values is explained. Three figures, one table, six bibliographic references.

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USSR

UDC 681.325.65

BOLTYANSKIY, A. A., PSHENICHNIKOV, Yu. V., SKOBELEV, O. P.

"Multichannel Analog-Digital Converters Based on Test Transient Processes in Measurement Circuits"

Novosibirsk, Konf. po avtomatiz. nauch. issled. na osnove primeneniya EVM, 1972--sbornik (Conference on Automating Computer-Based Scientific Research, 1972--collection of works), 1972, pp 77-83 (from RZh-Avtomatika, Teleme-khanika i Vychislitel'naya Tekhnika, No 11, Nov 72, abstract No 11B301)

Translation: The paper demonstrates the effectiveness of using methods based on test transient modes in measurement circuits to design multichannel analog-digital converters. The methods are formulated on the basis of the simplest model of pickups and measurement circuits in the form of an aperiodic system; the method of instantaneous values, the constant time method, the method of the first derivative, and the method of integral conversion are considered. The structures of multichannel converters for parametric and oscillator pickups developed on the basis of these methods are described. Two illustrations, bibliography of two titles. L. P.

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USSR

UDC 616.988.25-022.395.42-085.373.6:547.962.4

PSHENICHNOV, A. V., PSHENICHNOV, R. A., and PUSHKAREV, V. V., Perm Scientific Research Institute of Vaccines and Sera

"Advantages of Heterogeneous Polyspecies Gamma-Globulins for Seroprophylaxis and Therapy of Tickborne Encephalitis"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 70, pp 596-600

Abstract: Inoculation with heterogeneous immune sera or gamma-globulins was found to result in an accumulation of complement antiglobulins in the blood of recipients. The antiglobulins were detected in gel precipitation tests after 5-7 days and persisted for 1-1-1/2 months. After repeated injections of these preparations, the antiglobulins combine, neutralize the newly introduced antibodies and prevent their penetration into the blood. The results substantiate the principle of consecutive inoculation with different species of heterogeneous serum preparations to provide long-lasting passive immunity to tickborne encephalitis. There are reasons to believe that the suggested principle of seroprophylaxis and therapy will be applicable in viral and bacterial infections.

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USSR

UDC 616.988.25-022.395.42-085.373.6:547.962.4

PSHENICHNOV, A. V., PSHENICHNOV, R. A., and PUSHKAREV, V. V., Perm Scientific Research Institute of Vaccines and Sera

"Advantages of Heterogeneous Polyspecies Gamma-Globulins for Seroprophylaxis and Therapy of Tickborne Encephalitis"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 70, pp 596-600

Abstract: Inoculation with heterogeneous immune sera or gamma-globulins was found to result in an accumulation of complement antiglobulins in the blood of recipients. The antiglobulins were detected in gel precipitation tests after 5-7 days and persisted for 1-1-1/2 months. After repeated injections of these preparations, the antiglobulins combine, neutralize the newly introduced antibodies and prevent their penetration into the blood. The results substantiate the principle of consecutive inoculation with different species of heterogeneous serum preparations to provide long-lasting passive immunity to tickborne encephalitis. There are reasons to believe that the suggested principle of seroprophylaxis and therapy will be applicable in viral and bacterial infections.

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USSR

UDC 621.319.4.002.5

~~PSHENICHNYI~~ I. S., NIKITIN, V. A., YAKUSHEV, S. G., BUDKIN, I. A.,
ALEKSEYEV, V. L., ARBUZOV, A. D.

"A Device for Applying Silver Paste to Ceramic Disc Capacitor Blanks"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 33, Soviet Patent No 285112, class 21, filed 8 May 69, published
29 Oct 70, p 58

Translation: This Author's Certificate introduces a device for applying silver paste to ceramic disc capacitor blanks. The unit contains a rotating disc for transporting the blanks. Around the periphery of the disc are multiple-place cartridges with pockets for the blanks. The device also contains a mechanism for applying the paste to the blanks which is fitted with punches. Also included in the device are a drying chamber and a drive mechanism. As a distinguishing feature of the patent, the precision and productivity of the device are improved by placing hollow split sleeves with spring-loaded lugs in the cartridge pockets. Rods fit into these hollow sleeves and open them, and the punches are located on both sides of the cartridges.

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Super alloys

USSR

UDC 669.25:539.292

TSINENKO, O. V., PSHENINA, L. S., TYUMENTSEV, A. N., BUSHNEV, L. S., and
KOROTAYEV, A. D., Siberian Physico-Technical Institute imeni V. D. Kuznetsov

"Features of Discontinuous Decomposition in Co-Ni-Ti Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 1, Jul 71, pp 58-64

Abstract: From data obtained by conventional and electron microscopy and x-ray analysis of aging, discontinuous decomposition in a Co-Ni-Ti alloy was studied where it was shown that by means of discontinuous decomposition there occurs precipitation of the same ordered gamma-prime phase which is a case of continuous decomposition. Kinetics of discontinuous decomposition depend substantially on the state of the continuous decomposition of the matrix ahead of the front of the growing cell. It was shown that coalescence of the finely dispersed phase after continuous and discontinuous decomposition occurs as a result of secondary discontinuous decomposition so that by means of discontinuous decomposition there occurs not only precipitation of stable and metastable phases but also their coalescence. Five figures, 22 bibliographic references.

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1/2 026
UNCLASSIFIED
PROCESSING DATE--18SEP70
TITLE--INTERMITTENT DECOMPOSITION IN HARDENED AND DEFORMED ALLOYS -U-
AUTHOR--(05)-KOROTAYEV, A.D., BUSHNEV, L.S., PROTASOV, A.T., TYUMENTSEV,
A.N., PSHENINA, L.S.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED. FIZ. 1970, 13(1), 108-12
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CRYSTALLIZATION, COPPER ALLOY, TITANIUM ALLOY, ELECTRON
MICROSCOPY, METAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0960

CIRC ACCESSION NO--AT0105829

UNCLASSIFIED

STEP NO--UR/0139/70/013/001/0108/0112

-2/2 026

CIRC ACCESSION NO--AT0105829

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS OF CU-TI 4.3PERCENT ALLOY WERE HARDENED, DEFORMED, AND THEN STUDIED BY METALLOGRAPHY AND ELECTRON MICROSCOPY. WITH SMALL DEFORMATION DEGREES (LESS THAN OR EQUAL TO 20PERCENT) THE FORMATION OF AN INTERNAL STABLE PHASE WAS NOT OBSD. SINCE THIS FORMATION USUALLY IS PRECEDED BY RECRYSTN., IT WAS ASSUMED THAT THE RECRYSTN. CAUSED DISCONTINUOUS DECOMP. INSIDE OF GRAINS. AT THE DEFORMATION DEGREE OF 20PERCENT THE DISCONTINUOUS DECOMP. SHOULD BE EXPECTED AT GREATER THAN OR EQUAL TO 450DEGREES; IN ACTUAL EXPTS. THIS DECOMP. WAS OBSD. AT 550DEGREES..

UNCLASSIFIED

USSR

UDC 532

PSHENITSYN, V. I., RUSANOV, A. I.

"Optical Methods of Studying Surface Layers of Liquid Solutions"

V sb. Vopr. termodinamiki geterogen. sistem i teorii poverkhnostn. yavleniy
(Problems of the Thermodynamics of Heterogeneous Systems and the Theory of
Surface Phenomena -- Collection of Works), No. 1, Leningrad, Leningrad Uni-
versity, 1971, pp 198-230 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Yel17)

Translation: Theoretical and experimental studies devoted to measurements of thickness and to the study of the composition of the surface layer of liquid binary systems of organic substances by ellipsometry methods and on the basis of reflection of light from the boundaries of the two phases are surveyed and analyzed. The authors discuss the following questions on the basis of extensive published data and on the results of their own work: (1) the theoretical foundation of the given methods and their experimental achievement; (2) a comparison of ellipsometric and thermodynamic methods of studying the thickness of surface layers; (3) characteristics of the change in the coefficient of ellipticity and the thickness of the surface layers in the neighborhood of the critical point; (4) the factors effecting the reflecting power of the inter-phase surface; (5) the interrelationship between the reflection coefficient

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USSR

PSHENITSYN, V. I., RUSANOV, A. I., Vopr. termodinamiki geterogen. sistem i teorii poverkhnostn. yavleniy, No. 1, Leningrad, Leningrad University, 1971, pp 198-230

and the composition of the surface layer; (6) the relationship between the thickness of the surface layer and its reflecting power. N. L. Pokrovskiy.

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USSR

UDC 612.273+612.89

PSHENNIKOVA, M. G., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow

"Protein Synthesis in Neurons and Glial Cells of Stellate Ganglia in Rats Undergoing Adaptation to Hypoxia"

Leningrad, Fiziologicheskiy Zhurnal SSR, No 3, 1973, pp 421-427

Abstract: Protein synthesis was studied in Wistar rats by the autoradiographic method using tyrosine- H^3 . The animals were exposed to intermittent (6 hours daily for 40 days in a pressure chamber at an "altitude" of 7 km) and continuous (40 days in the Tyan-Shan mountains at 3.2 km above sea level) hypoxia. In the course of adaptation to both types of hypoxia, protein synthesis gradually intensified in the neurons of the stellate ganglia as well as in the surrounding glial cells. The neurons enlarged at the same time. The continuous regime stimulated protein synthesis in the neurons sooner and to a greater extent than did intermittent exposure. The article concludes with a discussion of the possible role of intensified protein synthesis in adaptation to hypoxia and of the factors that may determine the rate at which the process occurs.

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USSR

UDC 612.176:612.273+616-001.12+612.178

PSHENNIKOVA, M. G., and MANUKHIN, B. N., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, and Institute of Developmental Biology, Academy of Sciences USSR, Moscow

"Dynamics of the Norepinephrine Concentration in the Rat Myocardium During High-Altitude Hypoxia"

Moscow, Doklady Akademii Nauk, SSSR, Vol 198, No 6, Jun 71, pp 1,474-1,477

Abstract: Rats were kept for 24 hours in a pressure chamber at a simulated altitude of 2000 m after which the pressure was gradually reduced for six days. Starting on the eighth day and until the end of the experiment on the 45th day, the animals were exposed to a simulated altitude of 7000 m (equivalent to an atmospheric pressure of 307 mm Hg). After the first 10 days of hypoxia, the norepinephrine concentration dropped to 61.9% of the baseline value in the right ventricle and to 71% in the left. During the next 35 days the concentration of the mediator gradually increased until it was 80% of the control in the right ventricle and at the control level in the left. The return to normal of the norepinephrine concentration after the initial decrease is regarded as due to (i) activation of the resynthesis of catecholamines or (ii) decrease in consumption of norepinephrine as a result of

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034

UNCLASSIFIED

PROCESSING DATE--18SEP70
PEROXIDE

TITLE--PHOTO INITIATED REACTIONS OF FREE RADICALS IN POLYMERS.
RADICALS IN POLYPROPYLENE -U-
AUTHOR--(03)--KLINSHPONT, E.R., MILINCHUK, V.K., PSHEZHERSKIY, S.YA.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(1), 88-91

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SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--GAMMA RADIATION, PHOTOEFFECT, FREE RADICAL, POLYPROPYLENE,
PLASTIC FILM, EPR SPECTRUM, PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1984/0940

STEP NO--UR/0460/70/012/001/0088/0091

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PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055638

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IRRADN. OF ISOTACTIC POLYPROPYLENE
(I) FILMS (80 MU THICK) WITH GAMMA RAYS (15-200 MEGARADS) PRODUCED ALLYL
(II) AND POLYENE (III) RADICALS. THE PHOTO INITIATED REACTIONS OF THE
RADICALS WERE INVESTIGATED BY EPR SPECTROSCOPY AT 77DEGREESK. ON
CONTACT WITH O, II AND III RADICALS WERE CONVERTED TO PEROXIDE RADICALS
R PRIME1 AND R PRIME2 HAVING IDENTICAL EPR SPECTRA. THE TOTAL CONC. OF
R PRIME1 AND R PRIME2 IN I INCREASED 3 FOLD FOLLOWING IRRADN. WITH LIGHT
OF LAMBDA IS SMALLER THAN 280 NM. A MERCHANISM, INVOLVING THE FORMATION
OF REACTIVE SITES BY A CHAIN PROCESS, WAS PROPOSED.

UNCLASSIFIED

USSR

UDC 541.14

CHERVONENKO, V. S., ROGINSKIY, V. A., PSHEZHETSKIY, S. YA.
Physicochemical Institute imeni L. Ya. Karpov, Moscow, State
Committee for Chemistry

"Photochemistry of Free Radicals. Alcohol and Ether Radicals"
Moscow, Khimiya Vysokikh Energiy, Vol 4, No 5, Sep-Oct 70,
pp 450-451

Abstract: The methods of EPR, low-temperature spectroscopy, and chromatography were used to study photoreactions of the radicals which form in the gamma irradiation of methanol, ethanol, n-propanol, iso-propanol, and n-butanol frozen at 77°K, as well as diethyl, di-n-propyl and diisopropyl ethers.

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1/2 021

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--REACTIONS OF PHOTOEXCITED ALLYL TYPE RADICALS WITH HYDROCARBON
MOLECULES IN THE SOLID PHASE -U-

AUTHOR--(02)-ROGINSKIY, V.A.; PSHEZHETSKIY, S.YA.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 240-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--EPR SPECTRM, GAS CHROMATOGRAPHY, FREE RADICAL, GAMMA
RADIATION, RADIOLYSIS, HEXENE, LIGHT EXCITATION, HEPTENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/E05 STEP NO--UR/0456/70/004/003/0240/0245

CIRC ACCESSION NO--AP0140310

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140310

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTROSCOPY AND GAS CHROMATOG. WERE USED TO STUDY REVERSIBLE PHOTOCHEM. TRANSFORMATIONS OF ALLYLIC FREE RADICALS OBTAINED BY THE GAMMA RADIOLYSIS OF 1 HEXENE (I), 1 HEPTENE, AND 2 PENTENE, AS WELL AS OF THEIR SOLNS. IN 3 METHYLPENTANE (II) AT 77DEGREESK. THE EPR SPECTRA OF THE RADICALS OF HTE TYPE NEGATIVE CH SUB2 MINUS CH-CH-CH SUB2 (III) CONTAINED 5 OR 7 LINES. UPON EXCITATION WITH VISIBLE LIGHT (MU LESS THAN OR EQUAL TO 410 M MU) THESE RADICALS DISAPPEAR AND GIVE RISE TO AN EQUIV. AMT. OF ALKYL RADICALS OF THE MATRIX FORMED BY THE REACTION III SEXTILE PLUS RH YIELDS NEGATIVE CH SUB2 CH SUB2 CH:CH SUB2 (IV) PLUS R. REVERSE REACTIONS TAKE PLACE IN THE DARK (IV PLUS R YIELDS III PLUS RH). THE KINETICS OF THE FORWARD AND REVERSE REACTIONS IN GAMMA IRRADIATED SOLNS. OF I IN II WAS STUDIED AND THE MECHANISM WAS DISCUSSED. FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

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Acc. Nr:

AP0045522

Abstracting Service:

CHEMICAL ABST.

Ref. Code:

UR0456

89521c Effect of the unshared pair of nitrogen atom electrons on the photochemical properties of radicals in irradiated amines. Kotov, A. G.; Pukhal'skaya, G. V.; Pshezhetskii, S. Ya. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Zh. Fiz. Khim.* 1970, 4(1), 93-5 (Russ). ESR spectra of radicals formed by irradiation of some alkylamine hydrochlorides are described. The radicals formed from $\text{MeNH}_2\cdot\text{HCl}$ are decomposed by uv light. Photochem. stable ion radicals $\cdot\text{CH}_2\text{NH}_2^+\text{Me}$ (I), $\text{Me}_2\text{NH}^+\cdot\text{CH}_2$ (II), $\cdot\text{CH}_2\text{CH}_2\text{NH}_2^+$ (III), and $\cdot\text{CH}_2\text{CH}_2\text{NH}_2^+\text{Et}$ (IV) are formed from corresponding amine hydrochlorides. By irradiation of Me_2NHCl and Me_2NHCl ion radicals $\cdot\text{CH}_2\text{NH}_2^+$ are formed. No diminution of the ESR signal is observed when samples containing I, II, III, and IV are irradiated by uv light of wavelength $>260\text{ nm}$. The absorption region of these ion radicals is $<260\text{ nm}$, whereas corresponding radicals which possess the unshared electron pair on N absorb light below 450 nm .

J. Sedlar

REEL/FRAME

19780490

Acc. Nr:

AP0049941

Abstracting Service:
CHEMICAL ABST. 5-10

Ref. Code:

UR 0456

104231d Photodissociation of alcohols adsorbed on γ -irradiated silica gel. Shamonina, N. E.; Kotov, A. G.; Pshchetskii, S. Ya. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Khim. Vys. Energ.* 1970, 4(1), 43-8 (Russ). The EPR spectra are shown and analyzed for γ -irradiated silica gel (sp. surface 400 m²/g) washed with Et orthosilicate, dried, and heated at 400° for 6 hr at 10⁻³ torr with adsorbed EtOH, MeOH, or PrOH under the effect of red light. The photodissocn. of the alcs. takes place at surface paramagnetic centers, formed during irradiation of the silica gel. The relation is shown between Et and Me radicals and dose, and increases up to 1.0 megarads before leveling off. A diagrammatic sketch is shown relating the energies of recombination of stabilized electrons and "holes."

B. J. Ikeler

REEL/FRAME

19801877

714

USSR

PSHIROVSKIY, ZB.

"A Harvest 240 Days A Year"

Moscow, Nauka i Zhizn', No 3, 1972, pp 20-21

Translation: The mountains form an almost perfect ring here. At about the center of this ring are the fields and buildings of the Rupite farm, or the Experimental Base of Mass Cultivation of Algae under the open sky, established by the Institute of Genetics and Selection of Plants of the Bulgarian Academy of Agricultural Sciences.

We are told that we are in the crater of an extinct volcano, but are soon convinced that extinct does not at all mean cold. Heat is streaming from the sky; the temperature in the air reaches 35°C. We gladly accept an invitation to refresh ourselves with swimming, jump into the pool and jump out even more quickly. Only now do we really feel refreshed -- the temperature of the water in the pool is over 50°C. The air no longer seems hot; on the contrary, it is pleasantly fresh. We can go to the field.

At first glance, it reminds us of a huge stage set. The concrete sides of the basins contrast with the bright green liquid flowing through them. A hand submerged in it is instantly covered with a thick layer of crushed green balls. This is *Chlorella vulgaris* S. Z. 8/1, which is harvested here 240 days a year, from the middle of March until the middle of November. Converted to a dry mass, the average daily yield is 21 grams per

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USSR

PSHIROVSKIY, ZB., Nauka i Zhizn', No 3, 1972, pp 20-21

square meter. Multiplying this figure by 240, we obtain over 5 kilograms. Invisible algae produce 50 tons of dry mass per hectare annually. Clear. Dilov, the director of the base, adds to our calculations: the harvest obtained annually from a field unit planted with wheat will be obtained at Rupite in a week. Moreover, this harvest is of high quality: 50% dry mass Chlorella is a valuable plant protein. In a year, as much protein can be obtained from 0.1 hectare of a Chlorella field as from 0.8 hectare of especially protein-rich soya or from 40 hectares of beans.

Such large harvests have not been obtained yet at any known algae farm. Now, a resolution has been adopted for expanding the experimental base, which will become the first plant protein factory in Europe on a semi-industrial scale. In 1971, the basin area should already have been increased from 500 to 1,500 square meters.

The secret of these unusual achievements is hidden in the location of the base, which was far from accidental.

Chlorella develops best in a warm, dry climate. In Rupite there is an average of 200 clear, sunny days a year. Chlorella likes warm water. The springs in the crater of the extinct volcano produce 43 liters of water per second; the temperature of the water is 74° C. The water from these

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